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LADAS & PARRY
26 WEST 61ST STREET
NEW YORK, NY 10023

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| EXAMINER |
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FEELY, MICHAEL J

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| ART UNIT | PAPER NUMBER |
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1712

DATE MAILED: 10/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/049,233

Applicant(s)

QIAO ET AL.

Examiner

Michael J. Feely

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,6,7,9-14,16 and 18-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6,7,9,10,12,16,18,20,21,23 and 24 is/are rejected.
- 7) ☒ Claim(s) 4,11,13,14,19 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Pending Claims

Claims 1, 4, 6, 7, 9-14, 16 and 18-24 are pending.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 20 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 20 is dependent from cancelled claim 5. It appears that it should be dependent from claim 1.

Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. The rejection of claims 2, 3, 5, 8, and 15 under 35 U.S.C. 102(e) as being anticipated by Qiao et al. (US Pat. No. 6,423,760) **has been rendered moot** by the cancellation of these claims.
5. The rejection of claims 1, 4, 6, 7, 9-14, 16 and 18 under 35 U.S.C. 102(e) as being anticipated by Qiao et al. (US Pat. No. 6,423,760) **has been overcome** by the submission of a certified translation of the foreign priority document.
6. The rejection of claims 5 and 8 under 35 U.S.C. 102(e) as being anticipated by Angus et al. (Pub. No.: US 2004/0147677) **has been rendered moot** by the cancellation of these claims.

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7. The rejection of claims 1, 6, 7, and 18 under 35 U.S.C. 102(e) as being anticipated by Angus et al. (Pub. No.: US 2004/0147677) *has been overcome* by the submission of a certified translation of the foreign priority document.
8. The rejection of claim 15 under 35 U.S.C. 102(e) as being anticipated by Sahnoune et al. (Pub. No.: US 2004/0039075) *has been rendered moot* by the cancellation of this claim.
9. The rejection of claims 9, 10, and 16 under 35 U.S.C. 102(e) as being anticipated by Sahnoune et al. (Pub. No.: US 2004/0039075) *has been overcome* by amendment.
10. The rejection of claims 2, 3, 5, 8, and 15 under 35 U.S.C. 102(b) as being anticipated by Ottawa et al. (US Pat. No. 4,818,785) *has been rendered moot* by the cancellation of these claims.
11. The rejection of claims 1, 4, 6, 7, 9-14, 16 and 18-22 under 35 U.S.C. 102(b) as being anticipated by Ottawa et al. (US Pat. No. 4,818,785) *has been overcome* by amendment.
12. The rejection of claims 2, 3, and 5 under 35 U.S.C. 102(b) as being anticipated by Ueda et al. (US Pat. No. 5,082,732) *has been rendered moot* by the cancellation of these claims.
13. The rejection of claims 1, 4, 6, 7, 9-14, 16, and 18-22 under 35 U.S.C. 102(b) as being anticipated by Ueda et al. (US Pat. No. 5,082,732) *has been overcome* by amendment.
14. The rejection of claims 2, 3, 5, 8, and 15 under 35 U.S.C. 102(e) as being anticipated by Kawazura et al. (US Pat. No. 6,179,008) *has been rendered moot* by the cancellation of these claims.
15. The rejection of claims 9-13 and 16 under 35 U.S.C. 102(e) as being anticipated by Kawazura et al. (US Pat. No. 6,179,008) *has been overcome* by amendment.

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16. The rejection of claims 1, 6, 7, 18, 20, and 21 under 35 U.S.C. 102(e) as being anticipated by Kawazura et al. (US Pat. No. 6,179,008) has been withdrawn.

17. Claims 9, 10, 16, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Coran et al. (US Pat. No. 5,889,119).

Regarding claims 9, 10, 16, and 24, Coran et al. disclose: **(9)** a process for preparing a fully vulcanized thermoplastic elastomer (Abstract; column 3, lines 32-53), which comprises the steps of (i) providing a fully vulcanized powdery rubber as a first starting material (Abstract; column 3, lines 32-53; column 4, lines 18-26), and (ii) blending the fully vulcanized powdery rubber with plastic as a second starting material (Abstract; column 3, lines 32-53; column 4, lines 18-26), wherein the weight ratio of the fully vulcanized powdery rubber to the plastic is 30:70 to 75:25 (Abstract); and wherein said fully vulcanized powdery rubber comprises at least one rubber selected from the group consisting of *see claim for list* (column 6, lines 5-17; column 7, lines 27-35);

(10) wherein the weight ratio of the fully vulcanized powdery rubber to plastic is 50:50 to 75:25 (Abstract);

(16) wherein said plastic comprises at least one polymer or copolymer thereof selected from the group consisting of *see claim for list* (column 4, line 62 through column 5, line 2); and

(24) wherein the first starting material consists essentially of the fully vulcanized powdery rubber (Abstract; column 3, lines 32-53; column 4, lines 18-26) and the second starting material consists essentially of the plastic (Abstract; column 3, lines 32-53; column 4, lines 18-26).

Claim Rejections - 35 USC § 102/103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 1, 6, 7, 18, 20, 21, and 23 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kawazura et al. (US Pat. No. 6,179,008).

Regarding claims 1, 6, 7, 18, 20, and 21, Kawazura et al. disclose: **(1)** a fully vulcanized thermoplastic elastomer *comprising a rubber phase and a plastic matrix* (column 34, lines 30-39 and 57-63; column 37, lines 33-37), wherein an average particle size of the rubber phase of said fully vulcanized thermoplastic elastomer is 0.02-1 μ (column 34, lines 30-39 and 57-63; column 37, lines 33-37); wherein the weight ratio of rubber phase to plastic is 30:70 to 75:25 (column 31, lines 10-19); and wherein the rubber phase is at least one of *see claim for list* (column 31, lines 20-34);

(6) wherein said rubber has a gel content of at least 60% by weight (column 34, lines 30-39 and 57-63; column 37, lines 33-37), **(21)** wherein said rubber has a gel content of at least 75% by weight (column 34, lines 30-39 and 57-63; column 37, lines 33-37);

(7) wherein the plastic matrix is at least one of *see claim for list* (column 31, lines 10-19);

(18) a method of preparing a molded article with the vulcanized thermoplastic elastomer of claim 1 (Abstract); and

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(20) wherein the weight ratio of rubber phase to plastic 50:50 to 75:25 (column 31, lines 10-19).

Kawazura et al. do not explicitly disclose: (1) wherein a shape of the rubber phase of said fully vulcanized thermoplastic elastomer is spheroidic (column 34, lines 30-39 and 57-63; column 37, lines 33-37); however, this appears to be an inherent feature of the particulate discontinuous rubbery phase. It should be noted that *spheroidic* does not require an actual spherical shape. A spheroid is shaped *like* a sphere *but is not perfectly round*. Any “particle” that is characterized by particle size (diameter) is inherently *spheroidic* to some degree. Even if these “particles” were deformed or irregular in shape, they would inherently resemble a sphere to some extent.

Therefore, if not explicitly taught by Kawazura et al, then the particulate discontinuous rubber phase of Kawazura et al. would have been inherently spheroidic to some degree.

Regarding claim 23, the teachings of Kawazura et al. are as set forth above and incorporated herein. The rejection of claims 1, 6, 7, 18, 20, and 21 covers all of the claim 23 limitations except for: “*said fully vulcanized thermoplastic elastomer is prepared by a process comprising the steps of (i) providing a fully vulcanized powdery rubber, and (ii) blending the fully vulcanized powdery rubber with a plastic.*” However, it should be noted that this is a product by process claim, and it has been found that, “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the

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claim is unpatentable even though the prior product was made by a different process.” – *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Although Kawazura et al. use a dynamic vulcanization technique, wherein the rubber particles are formed during kneading/mixing, it appears that the final product would have been the same or an obvious variation to the final product of the claimed process, wherein the rubber is fully vulcanized before kneading/mixing.

Therefore, the fully vulcanized thermoplastic elastomer of Kawazura et al. would have been the same or an obvious variation of the claimed fully vulcanized thermoplastic elastomer because the patentability of a product does not depend on its method of production.

20. Claim 12 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Coran et al. (US Pat. No. 5,889,119).

Regarding claim 12, Coran et al. do not explicitly disclose: *(12)* wherein the shape of the fully vulcanized powdery rubber is spheroidic (Abstract; column 3, lines 32-53; column 4, lines 18-26); however, this appears to be an inherent feature of the ground/powdered rubber particles. It should be noted that *spheroidic* does not require an actual spherical shape. A spheroid is shaped *like* a sphere *but is not perfectly round*. Any “particle” that is characterized by particle size (diameter) is inherently *spheroidic* to some degree. Even if these “particles” were deformed or irregular in shape, they would inherently resemble a sphere to some extent.

Therefore, if not explicitly taught by Coran et al, then the ground/powdered rubber particles of Coran et al. would have been inherently spheroidic to some degree.

Response to Arguments

21. Applicant's arguments, see page 8 of the response, filed August 8, 2005, with respect to prior art status of Qiao et al. and Angus et al. have been fully considered and are persuasive.
22. Applicant's arguments, see pages 8-9 of the response, filed August 8, 2005, with respect to the applicability of Sahnoun et al. have been fully considered and are persuasive.
23. Applicant's arguments, see pages 11-12 of the response, filed August 8, 2005, with respect to the applicability of Ottawa et al. and Ueda et al. have been fully considered and are persuasive.
24. Applicant's arguments, see page 11 of the response, filed August 8, 2005, with respect to the applicability of Kawazura et al. to the instant process claims have been fully considered and are persuasive.
25. Applicant's arguments, see pages 9-11 of the response, filed August 8, 2005, with respect to the applicability of Kawazura et al. to the instant composition claims have been fully considered but they are not persuasive.

Applicants argue that the dynamic vulcanization process used by Kawazura et al. would not have resulted in the formation of an *spheroidic* rubber phase. The Examiner respectfully disagrees. It should be noted that *spheroidic* does not require an actual spherical shape. A spheroid is shaped *like* a sphere *but is not perfectly round*. Any "particle" that is characterized by particle size (diameter) is inherently *spheroidic* to some degree. Even if these "particles" were deformed or irregular in shape, they would inherently resemble a sphere to some extent.

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Allowable Subject Matter

26. Claims 4, 11, 13, 14, 19, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 4 and 19, Kawazura et al. and Coran et al. represent the closest prior art; however, they fail to teach or suggest an average particle size of the rubber phase within the range of 0.05~0.5 microns or 0.05~0.2 microns.

Regarding claims 11, 13, 14, and 22, Coran et al. represents the closest prior art; however they fail to teach or suggest an average particle size of the rubber phase within the range of 0.02~1 microns, 0.05~0.5 microns or 0.05~0.2 microns.

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mertz et al. (US Pat. No. 6,384,145) disclose a similar invention; however, it does not overlap with the scope of the instant claims.

28. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is 571-272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael J. Feely
Primary Examiner
Art Unit 1712

October 19, 2005

**MICHAEL FEELY
PRIMARY EXAMINER**